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In this communication are given the results of the observations of the quantity of rain which has fallen during the year 1849 at twenty stations in the valleys, and six mountain stations, varying in altitude above the sea from 500 feet to 3166 feet. There is also given a table of the temperature at Seathwaite in Borrowdale during the year 1849.

With reference to the mountain gauges, the author observes that, on the whole, the results are similar to those of the three preceding years, but, as might be looked for in a dry year like the past, the quantities of rain deposited at the various stations are more nearly equal than usual. With respect to the temperature, he observes that the statement he made in his last communication, that "the inhabitants of the Lake District valleys enjoyed a milder and more equable climate than the residents in the open country, and particularly in the winter months," is confirmed by the thermometrical results of the present winter (1849-50).

3. "On the relation of the Air and Evaporation Temperatures to the Temperature of the Dew-Point, as determined by Mr. Glaisher's Hygrometrical Tables founded on the factors deduced from the Six-hourly observations made at the Royal Observatory, Greenwich." By J. F. Miller, Esq., F.R.A.S. Communicated by Lieut.-Col. Sabine, R.A., For. Sec. R.S.

After pointing out the importance of the hygrometer, both in a scientific and a practical point of view, the author goes into the question of the advantages and disadvantages attending the use of Daniell's hygrometer, and the relative merits of this instrument and the dry and wet-bulb thermometers. Although satisfied of the accuracy of Mr. Glaisher's Tables (founded on the Greenwich Observations), which show at once the relation of the temperature of evaporation to that of the dew-point, he was unwilling to abandon the use of Daniell's apparatus for that of the wet and dry-bulb thermometers, slight as is the trouble of observing them, without personal experience of the correctness of the tables from which the dew-point was to be deduced. He therefore instituted a series of perfectly comparable observations by the two methods, and in this communication gives the results obtained from them during a period of twenty months. From a comparison of the dew-points determined by the two methods, he concludes that the results show in a striking manner the extreme accuracy of Mr. Glaisher's Tables, and afford additional testimony to the value of the Greenwich Hygrometrical Observations, and the resulting formula on which those tables are founded.

The author then refers to the subject of evaporation, and gives the results of his own observations at Whitehaven during six years, viz. from 1843 to 1848 inclusive. From these he states that the mean annual amount of evaporation is 30.011 inches; and the mean quantity of rain for the same period being 45.255 inches, the depth of the water precipitated exceeds that taken up by evaporation, on the coast in latitude  $54\frac{1}{2}^{\circ}$ , by 15.244 inches.